

*Notice of some Freshwater and Terrestrial Rhizopods.*

By PROF. LEIDY.

Prof. Leidy stated that among the amœboid forms noticed by him in the vicinity of Philadelphia, there was one especially remarkable for the comparatively enormous quantity of quartzose sand which it swallowed with its food. The animal might be viewed as a bag of sand! It is a sluggish creature, and when at rest appears as an opaque white, spherical ball, ranging from  $\frac{1}{8}$  to  $\frac{3}{8}$  of a line in diameter. The animal moves slowly, first assuming an oval and then a clavate form. In the oval form one measured  $\frac{2}{5}$  of a line long by  $\frac{2}{5}$  of a line broad; and when it became clavate it was  $\frac{2}{3}$  of a line long by  $\frac{1}{8}$  of a line broad at the advanced thick end. Another, in the clavate form, measured  $\frac{7}{8}$  of a line long by  $\frac{1}{3}$  of a line wide at the thick end. The creature rolls or extends in advance, while it contracts behind. Unless under pressure, it puts forth no pseudopods; and the granular entosarc usually follows closely on the limits of the extending ectosarc. Generally the animal drags after it a quantity of adherent dirt attached to a papillated or villous discoid projection of the body.

The contents of the animal, besides the granular matter and many globules of the entosarc, consist of diatoms, desmids, and confervæ, together with a larger proportion of angular particles of transparent and mostly colourless quartz. Treated with strong mineral acids, so as to destroy all the soft parts, the animal leaves behind more than half its bulk of quartzose sand.

The species may be named *AMŒBA SABULOSA*, and is probably a member of the genus *Pelomyxa* of Dr. Greef (*Archiv f. mikr. Anat.* x. 1873, p. 51).

The animal was first found on the muddy bottom of a pond in Dr. George Smith's place in Upper Darby, Delaware County, but has been found also in ponds in New Jersey.

When the animal was first noticed with its multitude of sand particles, it suggested the probability that it might pertain to a stage of life of *Diffugia*, and that by the fixation of the quartz particles in the exterior, the case of the latter would be formed. This is conjectural, and not confirmed by any observation.

A minute amœboid animal found on *Spirogyra* in a ditch at Cooper's Point, opposite Philadelphia, is of interesting character. The body is hemispherical, yellowish, and consists of a granular entosarc with a number of scattered and well-defined globules, besides a large contractile vesicle. From the body there extends a broad zone, which is colourless, and so exceedingly delicate that it requires a power of 600 diameters to see it favourably. By this zone the animal glides over the surface. Delicate as it is, it evidently possesses a regular structure, though it was not resolved under the best powers of the microscope. The structure probably consists of globular granules of uniform size, alternating with one another, so that the disk at times appears crossed by delicate lines, and at others as if finely and regularly punctated. The body of

the animal measures from  $\frac{1}{66}$  to  $\frac{1}{50}$  of a line in diameter ; and the zone is from  $\frac{1}{333}$  to  $\frac{1}{200}$  of a line wide. The species may be named *AMEBA ZONALIS*.

The interesting researches of Prof. Richard Greef, of Marburg, published in the second volume of Schultze's 'Archiv f. mikroskopische Anatomie,' on *Amœbæ* living in the earth ("Ueber einige in der Erde lebende Amœben, &c."), led me to look in similar positions for Rhizopods.

In the earth, about the roots of mosses growing in the crevices of the bricks of our city pavements, in damp places, besides finding several species of *Amœba*, together with abundance of the common wheel-animalcule, *Rotifer vulgaris*, I had the good fortune to discover a species of *Gromia*. I say good fortune ; for it is with the utmost pleasure I have watched this curious creature for hours together. The genus was discovered and well described by Dujardin from two species, one of which, *G. oviformis*, was found in the seas of France ; the other, the *G. fluviatilis*, in the river Seine.

Imagine an animal, like one of our autumnal spiders, stationed at the centre of its well-spread net ; imagine every thread of this net to be a living extension of the animal, elongating, branching, and becoming confluent so as to form a most intricate net ; and imagine every thread to exhibit actively moving currents of a viscid liquid, both outward and inward, carrying along particles of food and dirt, and you have some idea of the general character of a *Gromia*.

The *Gromia* of our pavements is a spherical cream-coloured body, about  $\frac{1}{16}$  of a line in diameter. When detached from its position and placed in water, in a few minutes it projects in all directions a most wonderful and intricate net. Along the threads of this net float minute *Naviculæ* from the neighbourhood, like boats in the current of a stream, until reaching the central mass they are there swallowed. Particles of dirt are also collected from all directions, and are accumulated around the animal ; and when the accumulation is sufficient to protect it, the web is withdrawn, and nothing apparently will again induce the animal to produce it.

From these observations we may suppose that the *GROMIA TERRICOLA*, as I propose to name the species, during dry weather remains quiescent and concealed among accumulated dirt in the crevices of our pavements, but that in rains or wet weather the little creature puts forth its living net, which becomes so many avenues along which food is conveyed to the body. As the neighbourhood becomes dry, the net is withdrawn to await another rain. The animal with its extended net can cover an area of nearly half a line in diameter. The threads of the net are less than the  $\frac{1}{30000}$  of an inch in diameter.—*Proc. Acad. Nat. Sci. Phil.* 1874, p. 88.